Preliminary Product Information Sheet

EPO-TEK® ED1003 (*formerly 90-94-1*)

Note: These are typical properties to be used as a guide only, not a specification. Data below is not guaranteed. Different batches, conditions and applications yield differing results.

Date: December 2019
Rev: VII
No. of Components: Single
Mix Ratio by Weight: N/A
Specific Gravity: 4.45
Pot Life: 28 Days
Shelf Life- Bulk: One year at -40°C

Recommended Cure: 150°C / 1 Hour

NOTES:

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use. Syringes must be rolled prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.

Product Description: A single component, electrically conductive adhesive designed for high power LED die attach applications. Its combination of high thermal conductivity, shiny silver appearance and low outgassing are ideal for the demanding requirements of high brightness LED's. Other features include a long pot-life, low viscosity and high thixotropic index making it suitable for a wide range of application methods including wafer level stamping and syringe dispensing.

MATERIAL CHARACTERISTICS*:

PHYSICAL PROPERTIES:	**Cure condition:** varies as required				
Color (before cure):	Silver				
Consistency:	Smooth thixotropic paste				
Viscosity (23°C) @ 1 rpm:		49,152	cPs		
@ 10 rpm		10,035	cPs		
@ 100 rpm		1,884	cPs		
Thixotropic Index:		4.9			
Glass Transition Temp:		160	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)		
Coefficient of Thermal Expansion (CTE):					
Below Tg:		41	x 10^{-6} in/in°C		
Shore D Hardness:		49			
Die Shear @ 23°C (Initial):		9.9	Kg		
Die Shear (After 1000 hrs 85C/85%RH):		6.4	Kg		
Degradation Temp:		326	°C		
Weight Loss:					
@ 200°C:		0.05	%		
@ 250°C:		0.23	%		
@ 300°C:		0.76	%		
Suggested Operating Temperature:		< 275	°C (Intermittent)		
Storage Modulus:		736,792	psi		
Ion Content:	Cl^-:	< 10 ppm	Na^+:	6 ppm	
	NH_4^+:	5 ppm	K^+:	4 ppm	
Particle Size:		≤ 20	microns		

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	8.46	W/mK
Volume Resistivity @ 23°C:	0.000045	Ohm-cm

The data above is INITIAL only - it may be changed at any time, for any reason without notice to anyone. It is provided only as a guide for evaluation/consideration.

* These material characteristics are typical properties that are based on a limited number of samples/batches. All properties are based on the cure indicated above. Some properties may vary as manufactured quantities are scaled up to commercialized production levels.

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